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EXAMINER	
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ART UNIT	**PAPER NUMBER**
1733	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/578,737	YOON ET AL.	
	Examiner	Art Unit	
	CHRISTOPHER KESSLER	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 October 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *83,85,87-110 and 112-170* is/are pending in the application.

4a) Of the above claim(s) *123-162 and 166-168* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *83,85,87-110,112-122,163-165,169 and 170* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Responsive to the amendment filed 19 October 2010, claims 83, 87, 95, and 108 are amended and claims 169 and 170 are added. Claims 83, 85, 87-122, 163-165 and 169-170 are currently under examination.

Status of Previous Rejections

2. Responsive to the amendment filed 19 October 2010, new grounds of rejection are presented.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 83, 85, 87-110 and 112-122, 163-165. 169 and 170 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami.

Regarding claim 83, the examiner notes that the limitation “for an automobile” is a statement of intended use for the steel sheet. The claim preamble must be read in the context of the entire claim. The determination of whether preamble recitations are structural limitations or mere statements of purpose or use “can be resolved only on review of the entirety of the [record] to gain an understanding of what the inventors actually invented and intended to encompass by the claim.” Corning Glass Works, 868 F.2d at 1257, 9 USPQ2d at 1966. If the body of a claim fully and intrinsically sets forth

all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction. Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999). See also Rowe v. Dror, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997). In the instant case, the limitation "for an automobile" does not imply or impart any structure to the steel sheet beyond what is otherwise claimed.

Murakami teaches the invention substantially as claimed. Murakami teaches a steel sheet for cylindrical containers (see Abstract, p. 1). Murakami teaches that the steel is cold-rolled (see claims 10-18 and pp. 14-19). Murakami teaches the composition of the steel sheet as shown in the chart (see pp. 14-19 and also claims 10-18):

Element	Claim 83	Murakami
C	0.003% or less	0.0005-0.040
S	0.005~0.03%	0.0100-0.0600
Al	0.01~0.1%	0.0010-0.0700
N	0.02% or less	0.0020-0.0300
P	0.03~0.2%	0.002-0.080
Mn	0.05~0.2%	0.03-2.00
Cr	0.2-1.2%	0.005-0.100

Fe/impurities	Balance	Balance

With the exception of Cr, the composition of Murakami thus overlaps the range as claimed, establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected a composition in the range as claimed because Murakami teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding the amount of chromium, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). In the instant case, the amount of chromium in the prior art is close enough to the claimed amount that one of ordinary skill in the art would have expected the two compositions to have essentially the same properties. Applicant is further directed to MPEP 2144.05.

Murakami teaches that the steel has excellent formability (see pp. 7 and 8, abstract). Regarding the limitations of age resistance, ratios of Mn, Cu and S, and size of MnS/CuS inclusions, Murakami further teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see pp. 19-24 and claims 17-

18, for example). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties. Applicant is further directed to MPEP 2112.01.

In the alternative, Murakami teaches careful control over the MnS and CuS inclusions (see pp. 17-18). Murakami teaches that the ratio of CuS/MnS < 0.30 through a careful adjustment of the Cu/Mn ratio (see pp. 17-18). Thus, Murakami teaches that the amounts of Mn, Cu and S are results-effective variables with respect to the softening of the material at welding (see pp. 17-18). It would have been obvious to one of ordinary skill in the art at time of invention to have optimized the relative amounts of Mn, Cu and S, because Murakami teaches that these ratios affect the softening of the material (see pp. 17-18). Applicant is further directed to MPEP 2144.05.

Also in the alternative, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, Taklatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. In re Austin, et al., 149 USPQ 685, 688. In the instant case, the amounts of Mn, Cu and S taught by Murakami fall within the ratios as claimed.

Regarding claim 85, Murakami teaches that the amount of N is 0.0020-0.0300 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claim 86, Murakami teaches that the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claim 87, Murakami teaches that the composition comprises 0.002-0.50% Si (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. Regarding claim 88, Murakami teaches that the amount of N is 0.0020-0.0300 and the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claim 89, Murakami does not describe the ratio of Al/N as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. In the instant case, the amounts of Al and N taught by Murakami fall within the ratios as claimed.

Regarding claims 90-91, Murakami teaches that the steel may comprise Mo in amount of 0.10 or less (see pp. 13 and 19), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claims 92-94, Murakami teaches that the steel may comprise V in amount of 0.10 or less (see pp. 13 and 19), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claim 95, Murakami teaches the invention substantially as claimed. Murakami teaches a steel sheet for cylindrical containers (see Abstract, p. 1). Murakami teaches that the steel is cold-rolled (see claims 10-18 and pp. 14-19). Murakami teaches the composition of the steel sheet as shown in the chart (see pp. 14-19 and also claims 10-18):

Element	Claim 95	Murakami
C	0.0005-0.003% or less	0.0005-0.040
S	0.003-0.025%	0.0100-0.0600
Al	0.01~0.08%	0.0010-0.0700
N	0.02% or less	0.0020-0.0300
P	0.2% or less	0.002-0.080
Cu	0.052~0.2%	0.005-0.050
Fe/impurities	Balance	Balance
	Note:	
	* indicates optional element	

Regarding the amount of copper, the prior art range including 0.050 is close enough to the claimed range including 0.052 that one of ordinary skill in the art would have expected the two compositions to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). Applicant is further

directed to MPEP 2144.05. The composition of Murakami (excepting copper) overlaps the range as claimed, establishing a prima facie case of obviousness for that range.

Murakami teaches that the steel has excellent formability (see pp. 7 and 8, abstract). Regarding the limitations of age resistance, ratios of Cu and S, and size and number of CuS inclusions, Murakami further teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see pp. 19-24 and claims 17-18, for example). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties.

Regarding the limitations of relative amounts of Cu and S, Murakami teaches careful control over the MnS and CuS inclusions (see pp. 17-18). Murakami teaches that the ratio of CuS/MnS < 0.30 through a careful adjustment of the Cu/Mn ratio (see pp. 17-18). Thus, Murakami teaches that the amounts of Mn, Cu and S are results-effective variables with respect to the softening of the material at welding (see pp. 17-18). It would have been obvious to one of ordinary skill in the art at time of invention to have optimized the relative amounts of Mn, Cu and S, because Murakami teaches that these ratios affect the softening of the material (see pp. 17-18).

Also in the alternative, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Cu and S taught by Murakami fall within the ratios as claimed.

Regarding claim 96, Murakami teaches that the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. Regarding claim 97, Murakami teaches that the amount of N is 0.0020-0.0300 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claim 98, Murakami teaches careful control over the MnS and CuS inclusions (see pp. 17-18). Murakami teaches that the ratio of CuS/MnS < 0.30 through a careful adjustment of the Cu/Mn ratio (see pp. 17-18). Thus, Murakami teaches that the amounts of Mn, Cu and S are results-effective variables with respect to the softening of the material at welding (see pp. 17-18). It would have been obvious to one of ordinary skill in the art at time of invention to have optimized the relative amounts of Mn, Cu and S, because Murakami teaches that these ratios affect the softening of the material (see pp. 17-18).

In the alternative, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Cu and S taught by Murakami fall within the ratios as claimed.

Regarding claim 99, Murakami teaches that the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the claimed range of 0.03~ 0.2% and establishing a prima facie case of obviousness for that range. Regarding claim 100, Murakami teaches that the composition comprises 0.002-0.50% Si (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. Regarding claim 101, Murakami teaches that the amount of N is 0.0020-

0.0300 and the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected amounts of N and P in the range as claimed because Murakami teaches the same utility over an overlapping range.

Regarding claim 102, Murakami does not describe the ratio of Al/N as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Al and N taught by Murakami fall within the ratios as claimed.

Regarding claims 103-104, Murakami teaches that the steel may comprise Mo in amount of 0.10 or less (see pp. 13 and 19), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of Mo in the range as claimed because Murakami teaches the same utility over an overlapping range. Regarding claims 105-107, Murakami teaches that the steel may comprise V in amount of 0.10 or less (see pp. 13 and 19), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claim 108, Murakami teaches the invention substantially as claimed. Murakami teaches a steel sheet for cylindrical containers (see Abstract, p. 1). Murakami teaches that the steel is cold-rolled (see claims 10-18 and pp. 14-19). Murakami teaches the composition of the steel sheet as shown in the following chart (see pp. 14-19 and also claims 10-18):

Element	Claim 108	Murakami
C	0.0005-0.003% or less	0.0005-0.040
S	0.003-0.025%	0.0100-0.0600
Al	0.01-0.08%	0.0010-0.0700
N	0.02% or less	0.0020-0.0300
P	0.2% or less	0.002-0.080
Mn	0.03-0.2% *	0.03-2.00
Cu	0.005-0.2% *	0.005-0.050*
Fe/impurities	Balance	Balance
	Note:	
	* indicates optional element	

The composition of Murakami thus overlaps the range as claimed, establishing a prima facie case of obviousness for that range.

Murakami teaches that the steel has excellent formability (see pp. 7 and 8, abstract). Regarding the limitations of age resistance, ratios of Mn, Cu and S, size of MnS/CuS inclusions, and aging index, Murakami further teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see pp. 19-24 and claims 17-18, for example). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties.

In the alternative, Murakami teaches careful control over the MnS and CuS inclusions (see pp. 17-18). Murakami teaches that the ratio of CuS/MnS < 0.30 through a careful adjustment of the Cu/Mn ratio (see pp. 17-18). Thus, Murakami teaches that the amounts of Mn, Cu and S are results-effective variables with respect to the softening of the material at welding (see pp. 17-18). It would have been obvious to one of ordinary skill in the art at time of invention to have optimized the relative amounts of Mn, Cu and S, because Murakami teaches that these ratios affect the softening of the material (see pp. 17-18).

Also in the alternative, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Mn, Cu and S taught by Murakami fall within the ratios as claimed.

Murakami does not teach the number of precipitates. Murakami further teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see pp. 19-24 and claims 17-18, for example). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties.

Regarding claim 109, Murakami teaches that the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected an amount of P in the range as claimed because Murakami teaches the same utility over an overlapping range.

Regarding claim 110, Murakami teaches that the amount of N is 0.0020-0.0300 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claim 112, Murakami teaches careful control over the MnS and CuS inclusions (see pp. 17-18). Murakami teaches that the ratio of CuS/MnS < 0.30 through a careful adjustment of the Cu/Mn ratio (see pp. 17-18). Thus, Murakami teaches that the amounts of Mn, Cu and S are results-effective variables with respect to the softening of the material at welding (see pp. 17-18). It would have been obvious to one of ordinary skill in the art at time of invention to have optimized the relative amounts of Mn, Cu and S, because Murakami teaches that these ratios affect the softening of the material (see pp. 17-18). Also in the alternative, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Mn, Cu and S taught by Murakami fall within the ratios as claimed.

Regarding claim 113, Murakami does not teach the number of precipitates. Murakami further teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see pp. 19-24 and claims 17-18, for example). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties.

Regarding claim 114, Murakami teaches that the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the claimed range of 0.03~0.2% and

establishing a prima facie case of obviousness for that range. Regarding claim 115, Murakami teaches that the composition comprises 0.002-0.50% Si (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. Regarding claim 116, Murakami teaches that the amount of N is 0.0020-0.0300 and the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claim 117, Murakami does not describe the ratio of Al/N as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Al and N taught by Murakami fall within the ratios as claimed.

Regarding claim 118, Murakami teaches that the steel may comprise Mo in amount of 0.10 or less (see pp. 13 and 19), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. Regarding claims 119-122, Murakami teaches that the steel may comprise V in amount of 0.10 or less (see pp. 13 and 19), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claims 163-165, Murakami does not describe the ratio of V/C as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of V and C taught by Murakami fall within the ratios as claimed.

Regarding claims 169-170, Murakami teaches that the amount of P is 0.002-0.080 (see claims 10-18), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

5. Claims 83, 85, 88-110, 112-122, 163-165, 169 and 170 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent document JP 10-158782 (machine translation attached; hereinafter "Kodama").

Regarding claim 83, the examiner notes that the limitation "for an automobile" is a statement of intended use for the steel sheet. The claim preamble must be read in the context of the entire claim. The determination of whether preamble recitations are structural limitations or mere statements of purpose or use "can be resolved only on review of the entirety of the [record] to gain an understanding of what the inventors actually invented and intended to encompass by the claim." Corning Glass Works, 868 F.2d at 1257, 9 USPQ2d at 1966. If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction. Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999). See also Rowe v. Dror, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997). In the instant case, the limitation "for an automobile" does not imply or impart any structure to the steel sheet beyond what is otherwise claimed.

Kodama teaches the invention substantially as claimed. Kodama teaches a steel sheet (plate) for photograph etching (see [0001]). Kodama teaches the composition of the steel sheet as shown in the chart (see [0008], [0015]-[0021] and also claims 1 and 2):

Element	Claim 83	Kodama
C	0.003% or less	0.005% or less
S	0.005~0.03%	0.001-0.02%
Al	0.01~0.1%	0.002-0.1%
N	0.02% or less	0.008% or less
P	0.03~0.2%	0.1% or less*
Mn	0.05~0.2%	0.1-0.5%
Cr	0.2-1.2%	0.1% or less*
Fe/impurities	Balance Note: * indicates optional element	Balance

With the exception of Cr, the composition of Kodama thus overlaps the range as claimed, establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected a

composition in the range as claimed because Kodama teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding the amount of chromium, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). In the instant case, the amount of chromium in the prior art is close enough to the claimed amount that one of ordinary skill in the art would have expected the two compositions to have essentially the same properties. Applicant is further directed to MPEP 2144.05.

Kodama teaches that the invention involves forming many holes in the steel sheet (i.e., the sheet is saxicavous; see [0001]-[0004]). Kodama teaches that the MnS inclusions affect the ability to etch the holes in the sheet, and that the size of the MnS inclusions is thus limited such that a 2σ value of particle size falls within 0.05-2 μm (see [00011]-[0013], [0008], and claim 1). The particle size range of the MnS inclusions in the steel of Kodama overlaps the size as claimed, establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected a particles size of MnS inclusions in the range as claimed because Kodama teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Kodama teaches that the sheet is cold rolled (see [0009]-[0010], claims 2 and 3, and [0036]-[0038]). Regarding the limitations of the relative ratios of Mn and S, it is well settled that there is no invention in the discovery of a general formula if it covers a

composition described in the prior art. In the instant case, the amounts of Mn and S taught by Kodama fall within the ratios as claimed.

In the alternative, Kodama teaches that the amounts of both Mn and S are carefully controlled in the steel (see [0017]-[0018]). Kodama teaches that too little Mn does not prevent brittleness, while too much Mn causes too much hardness in the steel (see [0017]). Kodama teaches that too little S results in poorly formed nitrides, while too much S results in cracking during hot rolling (see [0018]). Thus the amounts of Mn and S are results-effective variables, respectively, and one of ordinary skill in the art would have optimized the amounts of reach (and thus optimized the relative ratio) for the reasons taught by Kodama and cited above. Applicant is further directed to MPEP 2144.05.

Regarding the limitation of "having aging resistance," there is no quantity of aging resistance claimed. Thus the sheet of Kodama would have inherently had an aging resistance, because it would have been able to support some load prior to stretcher strain or creep failure.

Regarding claim 85, Kodama teaches wherein the N content is preferably 0.004% or less (see [0020]).

Regarding claim 88, Kodama teaches that the amount of N is preferably 0.008% or less (see [0020]), and that P may be added in an amount of 0.1% or less (see [0021]). The amounts of N and P in the steel of Kodama overlap the ranges as claimed, establishing a prima facie case of obviousness for the ranges.

Regarding claim 89, Kodama does not describe the ratio of Al/N as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Al and N taught by Kodama overlap the ratios as claimed.

In the alternative, Kodama teaches that the amount of Al in the steel serves to fix free N as AlN (see [0019]). Thus, Kodama teaches that the amount of Al is a results-effective variable with regard to AlN formation, and the amount of Al relative to N would have been optimized by one of ordinary skill in the art at time of invention in order to control the AlN formation.

Regarding claims 90-91, Kodama teaches that 0.1% or less of Mo may be added (see [0021]), overlapping the range as claimed and establishing a prima facie case of obviousness for that range. Regarding claims 92-94, Kodama teaches that 0.1% or less of V may be added (see [0021]), overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claim 95, Kodama teaches the composition of the steel sheet as shown in the chart (see [0008], [0015]-[0021] and also claims 1 and 2):

Element	Claim 95	Kodama
C	0.0005-0.003% or less	0.005% or less
S	0.003-0.025%	0.001-0.02%
Al	0.01~0.08%	0.002-0.1%
N	0.02% or less	0.008% or less

P Cu Fe/impurities	0.2% or less 0.052~0.2% Balance Note: * indicates optional element	0.1% or less* 0.1% or less* Balance

The composition of Kodama thus overlaps the range as claimed, establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected a composition in the range as claimed because Kodama teaches the same utility over an overlapping range.

Regarding the limitations of age resistance and size and number of CuS inclusions, Kodama further teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see [0009]-[0010], claims 2 and 3, and [0036]-[0038]). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties. Applicant is further directed to MPEP 2112.01.

Regarding the limitations of the relative ratios of Cu and S, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Cu and S taught by Kodama fall within the ratios as claimed.

In the alternative, Kodama teaches that the amounts of S are carefully controlled in the steel (see [0017]-[0018]). Kodama teaches that too little S results in poorly formed nitrides, while too much S results in cracking during hot rolling (see [0018]). Thus the amount S is a results-effective variable, respectively, and one of ordinary skill in the art would have optimized the amount of S (and thus optimized the relative ratio) for the reasons taught by Kodama and cited above. Applicant is further directed to MPEP 2144.05.

Regarding claim 96, Kodama teaches that 0.1% or less of P may be added (see [0021]), overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claim 97, Kodama teaches wherein the N content is preferably 0.004% or less (see [0020]).

Regarding claim 98, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Cu and S taught by Kodama fall within the ratios as claimed.

In the alternative, Kodama teaches that the amounts of S are carefully controlled in the steel (see [0017]-[0018]). Kodama teaches that too little Mn does not prevent brittleness, while too much Mn causes too much hardness in the steel (see [0017]). Kodama teaches that too little S results in poorly formed nitrides, while too much S results in cracking during hot rolling (see [0018]). Thus the amount S is a results-effective variable, respectively, and one of ordinary skill in the art would have optimized

the amount of S (and thus optimized the relative ratio) for the reasons taught by Kodama and cited above. Applicant is further directed to MPEP 2144.05.

Regarding claim 99, Kodama teaches that 0.1% or less of P may be added (see [0021]), overlapping the claimed range of 0.03~0.2% and establishing a prima facie case of obviousness for that range. Regarding claim 100, Kodama teaches that 0.1% of Cr may be added to the steel (see [0021]), overlapping the range as claimed and establishing a prima facie case of obviousness for that range. Regarding claim 101, Kodama teaches that the amount of N is preferably 0.008% or less (see [0020]), and that P may be added in an amount of 0.1% or less (see [0021]). The amounts of N and P in the steel of Kodama overlap the ranges as claimed, establishing a prima facie case of obviousness for the ranges.

Regarding claim 102, Kodama does not describe the ratio of Al/N as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Al and N taught by Kodama overlap the ratios as claimed.

In the alternative, Kodama teaches that the amount of Al in the steel serves to fix free N as AlN (see [0019]). Thus, Kodama teaches that the amount of Al is a results-effective variable with regard to AlN formation, and the amount of Al relative to N would have been optimized by one of ordinary skill in the art at time of invention in order to control the AlN formation.

Regarding claims 103-104, Kodama teaches that 0.1% or less of Mo may be added (see [0021]), overlapping the range as claimed and establishing a prima facie

case of obviousness for that range. Regarding claims 105-107, Kodama teaches that 0.1% or less of V may be added (see [0021]), overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claim 108, Kodama teaches the composition of the steel sheet as shown in the chart (see [0008], [0015]-[0021] and also claims 1 and 2):

Element	Claim 108	Kodama
C	0.0005-0.003% or less	0.005% or less
S	0.003-0.025%	0.001-0.02%
Al	0.01-0.08%	0.002-0.1%
N	0.02% or less	0.008% or less
P	0.2% or less	0.1% or less*
Mn	0.03-0.2% *	0.1-0.5%
Cu	0.005-0.2% *	0.1% or less*
Fe/impurities	Balance	Balance
	Note:	
	* indicates optional element	

The composition of Kodama thus overlaps the range as claimed, establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected a composition in the range as claimed because Kodama teaches the same utility over an overlapping range.

Regarding the limitations of age resistance and size of MnS and CuS inclusions, Kodama further teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see [0009]-[0010], claims 2 and 3, and [0036]-[0038]). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties.

Further, Kodama teaches that the MnS inclusions affect the ability to etch the holes in the sheet, and that the size of the MnS inclusions is thus limited such that a 2σ value of particle size falls within 0.05-2 μm (see [00011]-[0013], [0008], and claim 1). The particle size range of the MnS inclusions in the steel of Kodama overlaps the size as claimed, establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected a particles size of MnS inclusions in the range as claimed because Kodama teaches the same utility over an overlapping range.

Regarding the limitations of the relative ratios of Mn, Cu and S, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Mn, Cu and S taught by Kodama fall within the ratios as claimed.

In the alternative, Kodama teaches that the amounts of both Mn and S are carefully controlled in the steel (see [0017]-[0018]). Kodama teaches that too little Mn does not prevent brittleness, while too much Mn causes too much hardness in the steel

(see [0017]). Kodama teaches that too little S results in poorly formed nitrides, while too much S results in cracking during hot rolling (see [0018]). Thus the amounts of Mn and S are results-effective variables, respectively, and one of ordinary skill in the art would have optimized the amounts of reach (and thus optimized the relative ratio of Mn, S and Cu) for the reasons taught by Kodama and cited above.

Kodama does not specify what is the number of precipitates in the steel. Kodama further teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see [0009]-[0010], claims 2 and 3, and [0036]-[0038]). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties.

Regarding claim 109, Kodama teaches that 0.1% or less of P may be added (see [0021]), overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claim 110, Kodama teaches wherein the N content is preferably 0.004% or less (see [0020]).

Regarding claim 112, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Mn, Cu and S taught by Kodama fall within the ratios as claimed.

In the alternative, Kodama teaches that the amounts of both Mn and S are carefully controlled in the steel (see [0017]-[0018]). Kodama teaches that too little Mn

does not prevent brittleness, while too much Mn causes too much hardness in the steel (see [0017]). Kodama teaches that too little S results in poorly formed nitrides, while too much S results in cracking during hot rolling (see [0018]). Thus the amounts of Mn and S are results-effective variables, respectively, and one of ordinary skill in the art would have optimized the amounts of reach (and thus optimized the relative ratio of Mn, S and Cu) for the reasons taught by Kodama and cited above.

Regarding claim 113, Kodama does not specify what is the number of precipitates in the steel. Kodama further teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see [0009]-[0010], claims 2 and 3, and [0036]-[0038]). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties.

Regarding claim 114, Kodama teaches that 0.1% or less of P may be added (see [0021]), overlapping the claimed range of 0.03~0.2% and establishing a prima facie case of obviousness for that range.

Regarding claim 115, Kodama teaches that 0.1% of Cr may be added to the steel (see [0021]), overlapping the range as claimed and establishing a prima facie case of obviousness for that range. Regarding claim 116, Kodama teaches that the amount of N is preferably 0.008% or less (see [0020]), and that P may be added in an amount of 0.1% or less (see [0021]). The amounts of N and P in the steel of Kodama overlap the ranges as claimed, establishing a prima facie case of obviousness for the ranges.

Regarding claim 117, Kodama does not describe the ratio of Al/N as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Al and N taught by Kodama overlap the ratios as claimed.

In the alternative, Kodama teaches that the amount of Al in the steel serves to fix free N as AlN (see [0019]). Thus, Kodama teaches that the amount of Al is a results-effective variable with regard to AlN formation, and the amount of Al relative to N would have been optimized by one of ordinary skill in the art at time of invention in order to control the AlN formation.

Regarding claims 118-119, Kodama teaches that 0.1% or less of Mo may be added (see [0021]), overlapping the range as claimed and establishing a prima facie case of obviousness for that range. Regarding claims 120-122, Kodama teaches that 0.1% or less of V may be added (see [0021]), overlapping the range as claimed and establishing a prima facie case of obviousness for that range.

Regarding claims 163-165, Kodama does not describe the ratio of V/C as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of V and C taught by Kodama fall within the ratios as claimed.

Regarding claims 169 and 170, Kodama teaches that 0.1% or less of P may be added (see [0021]), overlapping the claimed range of 0.03~0.2% and establishing a prima facie case of obviousness for that range.

6. Claims 83, 85, 87-107, 112-122 and 163, 164, 169 and 170 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0196735 A1 (hereinafter "Sugiura").

Regarding claim 83, the examiner notes that the limitation "for an automobile" is a statement of intended use for the steel sheet. The claim preamble must be read in the context of the entire claim. The determination of whether preamble recitations are structural limitations or mere statements of purpose or use "can be resolved only on review of the entirety of the [record] to gain an understanding of what the inventors actually invented and intended to encompass by the claim." Corning Glass Works, 868 F.2d at 1257, 9 USPQ2d at 1966. If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction. Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999). See also Rowe v. Dror, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997). In the instant case, the limitation "for an automobile" does not imply or impart any structure to the steel sheet beyond what is otherwise claimed.

Sugiura teaches the invention substantially as claimed. Sugiura teaches a steel sheet (plate) for automobiles (see [0001]-[0002]). Sugiura teaches the composition of the steel sheet as shown in the chart (see [0034]-[0084] and also claims 1, 7 and 8):

Element	Claim 83	Sugiura
C	0.003% or less*	0.001-0.3%
S	0.005~0.03%	Less than 0.03%*
Al	0.01~0.1%	0.01-3.0%
N	0.02% or less	Less than 0.01%*
P	0.03~0.2%	0.005-0.15%
Mn	0.05~0.2%	Less than 3%*
Cr	0.2-1.2%	Less than 1.5%*
Fe/impurities	Balance Note: * indicates optional element	Balance

The composition of Sugiura thus overlaps the range as claimed, establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected a composition in the range as claimed because Sugiura teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Sugiura further teaches that the steel is made by a process including heating to 1000-1300˚C, hot rolling with a finish temperature at (Ar_3-100) to (Ar_3+50)˚ C, cooling

and coiling (see [0068] for example). Sugiura further teaches that the cooling can be at a rate of more than 10˚C/s and the sheet can be further cold rolled (see [0090]-[0092]).

Regarding the limitations of age resistance, ratios of Mn, Cu and S, and size of MnS/CuS inclusions, Sugiura teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see [0068] and [0090]-[0092], for example). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties. Applicant is further directed to MPEP 2112.01.

Also in the alternative, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, Taklatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. In re Austin, et al., 149 USPQ 685, 688. In the instant case, the amounts of Mn and S taught by Sugiura overlap the ratios as claimed.

Regarding claim 85, Sugiura teaches an overlapping amount of N (see claims 7 and 8).

Regarding claim 87, Sugiura teaches an overlapping amount of Si (see claims 7 and 8).

Regarding claim 88, Sugiura teaches an overlapping amount of N and P (see claims 7 and 8).

Regarding claim 89, Sugiura does not describe the ratio of Al/N as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Al and N taught by Sugiura overlap the ratios as claimed.

Regarding claims 90-91, Sugiura further teaches that the alloy may comprise less than 1% Mo (see [0084] or claim 8), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. Applicant is further directed to MPEP 2144.05.

Regarding claims 92-94, Sugiura further teaches that the alloy may comprise less than 0.2% V (see [0084] or claim 8), said range overlapping the range as claimed and establishing a prima facie case of obviousness for that range. Applicant is further directed to MPEP 2144.05.

Regarding claim 95, Sugiura teaches the composition of the steel sheet as shown in the chart (see [0034]-[0084] and also claims 1, 7 and 8):

Element	Claim 95	Sugiura
C	0.0005-0.003% or less	0.001-0.3%
S	0.003-0.025%	Less than 0.03%*
Al	0.01~0.08%	0.01-3.0%
N	0.02% or less	Less than 0.01%*
P	0.2% or less	0.005-0.15%

Cu Fe/impurities	0.052~0.2% Balance Note: * indicates optional element	Less than 3%* Balance

The composition of Sugiura thus overlaps the range as claimed, establishing a prima facie case of obviousness for that range. It would have been obvious to one of ordinary skill in the art at time of invention to have selected a composition in the range as claimed because Sugiura teaches the same utility over an overlapping range. Applicant is further directed to MPEP 2144.05.

Regarding the limitations of age resistance, ratios of Mn, Cu and S, and size of MnS/CuS inclusions, Sugiura teaches that the steel is processed in a manner including hot rolling, a controlled cooling, cold rolling and continuous annealing steps substantially similar to those of the instant invention (see [0068] and [0090]-[0092], for example). Thus, the steel sheet having the same composition and processed in a similar manner would have been expected by one of ordinary skill in the art to possess the same properties. Applicant is further directed to MPEP 2112.01.

Regarding claims 96 and 97, Sugiura teaches an overlapping amount of N and P (see claims 7 and 8).

Regarding claim 98, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Cu and S taught by Sugiura fall within the ratios as claimed.

Regarding claim 99, Sugiura teaches an overlapping amount of P (see claims 7 and 8).

Regarding claim 100, Sugiura teaches an overlapping amount of Si (see claims 7 and 8).

Regarding claim 101, Sugiura teaches an overlapping amount of N and P (see claims 7 and 8).

Regarding claim 102, Sugiura does not describe the ratio of Al/N as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of Al and N taught by Sugiura overlap the ratios as claimed.

Regarding claims 103-107, Sugiura is applied to the claims as stated above.

Regarding claims 163-164, Sugiura does not describe the ratio of V/C as claimed. However it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. In the instant case, the amounts of V and C taught by Sugiura overlap the ratios as claimed.

Regarding claims 169 and 170, Sugiura teaches an overlapping amount of P (see claims 7 and 8).

Response to Arguments

7. Applicant's arguments filed 19 October 2010 have been fully considered but they are not persuasive.

Applicant argues that the prior art Murakami and Kodama do not teach the claimed range of chromium in claim 83. The examiner agrees that the claimed amount of chromium is not taught by either of these references. However, the claim would have been obvious to one of ordinary skill in the art for the reasons stated above.

Applicant argues that Murakami does not teach the claimed amount of Copper in claim 95. The examiner agrees that the claimed amount of copper is not taught by Murakami. However, the claim would have been obvious to one of ordinary skill in the art for the reasons stated above.

In the remarks of October 19 2010, at p. 14, Applicant argues that "The composition recited in independent claim 95 specifically does not contain Mn and, thus, does not contain MnS precipitates." The examiner disagrees with this statement because applicant's statement about claim 95 is false. While Mn is not explicitly claimed in claim 95, applicant has chosen to use the claim language "comprising," which does not exclude elements such as Mn or MnS. Applicant is further directed to MPEP 2111.03. Thus, regardless of the teachings of Kodama of the importance of MnS inclusions, the composition of Kodama is not excluded from claim 95, and the rejection is applied as stated above.

Applicant argues that Murakami and Kodama respectively do not teach the claimed amount of inclusions in the steel or the claimed aging index of the steel of claim 108. However, the claim would have been obvious to one of ordinary skill in art for the reasons stated above.

Applicant argues that Murakami and Kodama are respectively drawn to solving different problems than the instant invention, which is a steel for an automobile and requires enhanced formability. In response, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). In the instant case, the formability of the steel is not claimed. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The broad limitation "for an automobile" does not imply any specific measure of formability for the steel sheet (absent of evidence to that effect).

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER KESSLER whose telephone number is (571)272-6510. The examiner can normally be reached on Mon-Fri, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Roy King/
Supervisory Patent Examiner, Art Unit 1733

csk